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Welfare Policy, Language Group and the Duration of Lone Motherhood Spells

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Abstract

The duration of spells of lone motherhood has important consequences for the economic well being of the members of such families and the cost of social programs. We use a large sample of linked income tax records to estimate a competing risk model of the impact of welfare benefits, language group, and other demographic characteristics on the likelihood of an exit to both marital and common law unions. We also consider the economic consequences of exits from motherhood to such unions.

INTRODUCTION

Social policy makers and researchers in Canada have devoted considerable attention to lone mother families. In the 2001 Census, lone mother families account for 15 percent of all Canadian families with dependent children and were among the most economically vulnerable in society. For example, 53% of lone mother families had low income as opposed to 11% of couples with children. The low-income spells of lone mothers also tend to be longer and deeper than those of two-parent families (National Council of Welfare 2001 and Finnie and Sweetman 2003). Dooley (1999) examines the extensive welfare participation of Canadian lone mothers. Because of the hardships they suffer, their draw on public resources, the potential handicaps their children face, and other related issues, lone mother families, especially those in low income, remain high on the research agenda.

One important dimension of lone motherhood that has received very little attention in the Canadian research literature, however, is the length of time spent in that status. The duration of spells of lone motherhood has important consequences for the economic well being of the members of those families and the cost of social programs. We are aware of only three Canadian papers (Desrosiers and Le Bourdais 1993, Le Bourdais, Desrosiers and LaPlante 1995, Lefebvre and Merrigan 1998) that examine the duration of spells of lone motherhood and only the last of these explicitly considers the impact of welfare policy variables. These studies are based on relatively small samples of data that are retrospective in nature rather than longitudinal and, even more importantly, are now at least fifteen years old.

The 1990's witnessed important changes in welfare policy and related income support programs in most provinces and at the federal level, most importantly the National Child Benefit

Supplement. The principal goals of these reforms were to lessen reliance on welfare and strengthen labor force attachment. Canadian welfare caseloads have dropped dramatically and there is evidence that policy reforms have played a role in this process (Finnie, Irvine and Sceviour 2004). The impact of these policy changes on the length of lone motherhood spells has yet to be examined and the first objective of this paper is to estimate this impact using a sample of linked income tax records from the Longitudinal Administrative Databank (LAD) for the period 1982 through 2000.

A second objective of the paper is to extend the Canadian literature on lone motherhood spells not just in terms of their duration but also in terms of the relevant exit states. Common-law unions have become increasingly important especially in Quebec. In 1981, 7% of all couples in Quebec and 5% of all couples in the rest of Canada were living in common-law unions. By 2001, these proportions were 30% in Quebec and 12% in the rest of Canada. In 1971-73, the proportion of births occurring within common-law unions was 4% in Quebec and 3% in the rest of Canada. By 1997-98, this proportion had grown to 46% in Quebec and 15% in the rest of Canada (Le Bourdais and Lapierre-Adamcyk 2004). (The proportions of births outside of any union grew from 6-7% to 9-10% in both areas.)

No Canadian study, however, has either estimated a competing risk model of the exit from lone motherhood to different kinds of unions or examined the economic consequences of exits to these different states. Such a study is of interest for at least two reasons. First, the impact of various explanatory variables, such as the level of welfare benefits, on the likelihood of an exit from lone motherhood may differ substantially with respect to the specific state to which the person exits. Second, the consequences of an exit, both economic and otherwise, may vary with the exit state. In this regard, several Canadian studies have demonstrated that an exit from lone

motherhood usually lowers the proportion of mothers and children with low income and on welfare, but differences by exit state and language group have not been analyzed to our knowledge (Finnie and Sweetman 2003, Picot, Zyblock and Piper 1999).

Unlike most sources of longitudinal data, the LAD provides a sample of spells of lone motherhood sufficiently large to provide answers to the following questions among others. Does the likelihood of an exit differ by the exit state? Does the impact of welfare benefit levels or other variables, such as the age of mother and children, on the exit rate from lone motherhood vary by exit state? Is there evidence of changes during the 1990's in the exit rates to different states? Are there differences in the exit rates to different states between lone mothers in provinces with different histories of welfare reform or between lone mothers in Francophone Quebec versus the rest of Canada? Do the economic consequences of an exit from lone motherhood vary by exit state and/or language group?

The next section of the paper contains a brief review of the literature. Our data, methods, descriptive statistics and empirical hazard functions are discussed next followed by estimates of our competing risk models of exit from lone motherhood.

LITERATURE REVIEW

There are three published Canadian studies of the length of lone motherhood spells. Desrosiers and Le Bourdais (1993) use retrospective family-history data from the 1984 Canadian Family History Survey to construct empirical hazard and survival functions. They report that the likelihood of an exit declines with the length of the spell. One-sixth of all spells in their sample last less than a year but one-third last more than ten years.

Proportional hazard models are estimated by Le Bourdais, Desrosiers and LaPlante (1995) using the 1984 Canadian Family History Survey and by Lefebvre and Merrigan (1998) using retrospective family-history data from the 1990 General Social Survey. In both papers, there is a single exit state to a union, either marital or common-law. (Lone motherhood spells which terminate for other reasons, most commonly the aging of dependent children, are censored.) Both papers report that the likelihood of an exit declines with the mother's age, increases with the age of the youngest child, and is higher for lone mothers who were single prior to lone motherhood (henceforth "previously single") than for those who were previously married or common-law. (Throughout this paper, we will use the term "married" to refer to a registered as opposed to a common-law union.) Among the previously married or common-law, there is no difference between the separated/divorced and widowed in the likelihood of an exit once one controls for the mother's age. LeBourdais et al. report an increase over time in exit rates, whereas Lefebvre and Merrigan, using a more recent data set, report no such secular trend. LeBourdais et al. also report very weak positive effects of the mother's education and numbers of children on the hazard rate whereas Lefebvre and Merrigan find strongly negative effects of both variables.

Only Lefebvre and Merrigan include the level of welfare benefits in each province for a lone-parent family and for a two-parent family in their model. In the case of previously single lone mothers, higher benefits for single parent (two-parent) families are associated with longer (shorter) spells of lone motherhood. This is not true, however, in the case of previously married or common-law lone mothers. This finding of a significant effect of welfare benefits contrasts with the two other principal Canadian studies of the relationship between welfare benefits and marital status. In an earlier paper also using the 1990 General Social Survey, Lefebvre and

Merrigan (1997) find no significant effect of the level of welfare benefits for lone parents on the likelihood of dissolution for marital or common-law unions. The level of welfare benefits for two parent families was not included in that study.

Dooley et al. (2000) use a time-series of cross-sections from the Survey of Consumer Finances to analyze the relationship between welfare benefits and the likelihood that a woman is a lone mother. With such data, the multivariate coefficients reflect the impact of the independent variables on both the likelihood of starting a spell of lone motherhood (incidence) and the length of the spell (duration). These authors find no significant effect for the welfare benefits of either a single parent or a couple. Hence, the principal Canadian support for a relationship between welfare benefits and marital status comes from Lefebvre and Merrigan's (1998) finding for the duration of lone mother spells among the previously single.

THE DATA AND EMPIRICAL HAZARD RATES

The LAD Database and Estimation Sample

The Longitudinal Administrative Database (LAD) is a Statistics Canada database developed from personal income tax information as well as other administrative information regarding nontaxable transfer payments. Unlike surveys such as the Survey of Labour and Income Dynamics (SLID), the LAD lacks specific information on many socioeconomic variables such as education and hours of paid work. However, the LAD has the clear advantage of enormous sample size (currently with almost 4.7 million records per year, a 20% sample of all tax filers) in a longitudinal structure that is updated annually. It also contains highly detailed data

concerning the level and sources of annual income. Inaccuracy may arise in the LAD due to the incentive of some tax filers to misrepresent their income to the tax authorities. It is not clear, however, that there is more misrepresentation to the tax authorities than to surveyors given that the legal penalties are substantial for the former and nonexistent for the latter. Furthermore, recall error is likely much less common in the LAD due to the information system that assists accurate responses (T4 slips and the like) and the linkages of the LAD to administrative records for payments such as the Canadian Child Tax Benefit.

We use data from the LAD for the ten provinces and the years 1982 through 2000. We first restricted the LAD sample to women age 18 through 54, an age range which contains over 95% of Canadian lone mothers with children under age 18 in the Survey of Consumer Finances (Dooley 1999). Our next step was to categorize these women into one of the following family types in each year: lone mother, married with children, living common-law with children, married or living common-law with no children, unattached, and "filing child". The Appendix provides a detailed description of this categorization process. A lone mother is defined as a woman who has a child under 18 and is neither married nor living common-law. In the definitions of married with children and living common-law with children, the phrase "with children" refers to children under 18. A filing child is an individual age 18 or more who has filed using their parents as the home address and who is neither married nor living common-law, lives with one or both parents, and has no dependents.

We use lower-case "t" to refer to the year of entry into lone motherhood and upper-case "T" to refer to the year of exit from lone motherhood. A spell of lone motherhood starts when a woman is of a family type other than lone parent at the end of t-1 and is a lone parent at the end of year t. (Demographic information on tax forms refer to the end of the calendar year). Hence, t

is a transition year and t+1 is the first full year in which we observe the woman as a lone mother. A spell of lone motherhood ends when a woman is a lone parent at the end of T-1 and some family type other than lone parent at the end of year T. Hence, T is a transition year and T+1 is the first full year in which we observe the woman after a spell of lone motherhood.

In order to minimize the mis-measurement of spells of lone motherhood, we imposed a series of criteria, which are again described in the Appendix, for determining valid entries into and exits from this status. Most importantly, we require that we observe a woman for two years prior to, and for two years after, the start of a spell of lone motherhood (year "t") in order to assess accurately her family type prior to lone motherhood and to eliminate sequences of very short spells of lone motherhood that may be due to mis-measurement. Short spells of lone motherhood are permitted in our samples. We simply require the minimum five year "window" to ensure that any short spell of lone motherhood is consistent with the woman's status over a longer sequence of years. The implication of this criterion is that the earliest year "t" in our data is 1984 and the latest is 1998.

For several reasons, we are confident that our LAD sample is representative of all Canadian lone mother spells. First, the number of lone mother families in our LAD sample in any given year is between 102 and 110 percent of the estimated number of lone mothers found in the Survey of Consumer Finances (Dooley 1999 and further estimates made for this study) and this difference is smallest in the recent years. Second, a return to a former partner occurs in 27% of LAD exits to a marital or common-law union with children, a figure which is very close to the estimate of 29% reported by Juby, LeBourdais and Marcil-Gratton (2005) who use the National Longitudinal Survey of Children and Youth to provide the only other Canadian study of this

question of which we are aware. Third, the general pattern of our empirical hazard and survival functions reported below are similar to those found in previous studies with survey data.

We do not have a complete marital history for individuals in the LAD and, therefore, cannot limit the estimation sample to first spells of lone motherhood as did LeBourdais et al. (1995) and Lefebvre and Merrigan (1998). We do, however, allow a woman to have multiple spells of lone motherhood over the period covered, but only 6.8 % and 0.2% of the total sample spells are second and third spells respectively. Controls for the order of spell had no substantive impact on our multivariate estimates.

As indicated above, the spells in our sample can have a start year "t" as early as 1984. For three reasons, however, we have considered only exits ("T") from the year 1993 or after. The first two of these reasons reflect important changes in the 1992 federal tax form. This was the first year in which individuals could self-identify as living in a "common-law union". In 1991 and earlier years, the LAD identifies common-law status solely by means of algorithms that have been developed at Statistics Canada based on address matches, individuals' names and ages, and the identification of other individuals resident at the same address. (See the Appendix for a more detailed discussion.) Nineteen ninety-two was also the first year in which social assistance income was reported on federal tax forms, and some of our models control for the presence and level of income from this and other sources of income. The third reason is that we believe our data for provincial welfare benefit levels to be most accurate for the period 1992 and beyond.

As a sensitivity check, we estimated our models with a sample of lone mother spells limited to those that also *started* in 1992 or after. This produced no substantive differences in our findings and, hence, Tables 2 and 3 contain estimates obtained with spells starting as early as

1984 in order to be able to present hazard rate estimates for spells of length greater than eight years.

Empirical Hazard and Survival Rates

Figure 1 shows the empirical hazard and survival rates for Canada as a whole. The likelihood of an exit in year 1 of the spell is 17%, leaving 83% of the original cohort surviving in the status of lone motherhood. The hazard rate falls to 15% in year 2, and the survival rate to 70%. The overall hazard rate declines somewhat as the spell lengthens, but turns up beyond year 10 (see below for an explanation). The survival function shows that about one-sixth of all spells last only one year (as also found by Desrosiers and Le Bourdais) but that only one-fifth last more than 10 years (which is less than the one-third figure found in that previous study).

Figure 2 shows that the shape of the hazard function depends on the type of exit, which is a question not considered in previous Canadian studies. The exit rate to "married with children" starts at 7% and declines thereafter. The exit rate to "common-law with children", in contrast, has a non-monotonic pattern with an average value of 6%-7% in the first six years of the spell and declines steadily thereafter. After year 1 of the spell, an exit to a common-law union is thus more likely than an exit to marriage. (Of course, some of these common-law unions will eventually result in registered marriages.) In results not shown here, the combined hazard of an exit to any union, either marital or common-law, declines steadily from 13% to 4% between year 1 and year 13 of a spell.

Figure 2 also shows that the hazard of an exit to "single with no children under 18" is either stable or increases very gradually during the first 10 years, but rises noticeably thereafter.

The increase in this hazard rate beyond year 10 reflects the fact that most of these exits are due to the aging of the youngest child from age 17 to 18 (results not shown here) rather than to a departure of a child under 18 from the household. Finally, the hazard of an exit to the status of married or common-law with no children is very small and stable across virtually all spell years.

As discussed in the Introduction, Francophones in Quebec are more likely than other Canadians to live in, and have children in, common-law unions as opposed to registered marriages. This difference has not been examined, to our knowledge, in the context of exits from spells of lone motherhood. The LAD identifies language group as that used on the tax forms. Ninety per cent of federal tax forms in Quebec are filed in French and 10% in English. Outside of Quebec, the proportions are 98% English and 2% French. In survey data, substantial numbers of Canadians identify neither French nor English as "first language" or "language used at home" (Statistics Canada 2004). We take language used on the tax form as a signal of the official language of Canada with which the individual is most comfortable or to which she has greatest ease of access.

Figure 3 provides the hazard rates to marital and common-law unions for all of Canada other than Francophone Quebec (NOTFQ) and for Francophone Quebec (FQ). In any given spell year, the probability of an exit to married with children is indeed higher in NOTFQ than in FQ and the reverse is true for the probability of an exit to common-law with children. Even in NOTFQ, however, an exit to marriage is more likely than an exit to common-law only in the first year of the spell. The latter, therefore, is the more common exit type for either group.

Figure 4 shows that the combined likelihood of an exit to either a marital or common-law union (that is, the combined exit states) is very similar in NOTFQ and FQ. This finding supports the claim made by Le Bourdais and Lapierre-Adamcyk (2004) that Francophone Quebec and the

rest of Canada differ in the type of union chosen but not in the propensity to live in a union.

Table 1 shows that the differences between language groups noted in Figure 3 are also true conditional on marital status prior to lone motherhood. In each panel in Table 1, exit rates to marriage are always larger in NOTFQ than in FQ and the opposite is almost always true for exit rates to common-law unions. For each prior marital status, however, NOTFQ and FQ have similar combined exit rates to either type of union. Finally, an exit to a common-law union is usually more likely than an exit to marriage regardless of prior marital status.

Table 1 also shows, however, that prior marital status *per se* matters, as reported by LeBourdais et al. and Lefebvre and Merrigan (though not by language group). Within each language group, the exit rate to marriage is larger among the previously married than among the previously common-law, and the reverse is true for the exit rate to common-law unions. Table 1 also indicates that the exit rate to marriage is greater among the previously single (unattached and filing children) than among the previously common-law, and that the previously single have the highest exit rate to common-law unions of all three groups, especially in FQ. Each of these last two observations, however, reflects to a significant degree the low average age of the previously single, as multivariate estimates in the next section show that the exit rate to a common-law union is highest among the previously common-law once one controls for age of the mother.

MULTIVARIATE ESTIMATES

Estimation Methods and Control Variables

We estimated a competing risk model in which each mother is permitted to exit to any of

the four states in Table 1 but we report coefficient estimates only for the exits that we believe to be of most interest, namely, exits to marital and common-law unions. Upon exit, the observation is censored unless and until a woman starts a new spell of lone motherhood. We use the standard logit model specification to estimate the probability of exiting lone motherhood from one year to the next as a function of various time-varying personal characteristics and policy variables plus a series of dummy variables indicating the current spell length and calendar year. [1]

The summary statistics in Table A-1 in the Appendix are based on the number of spell-years in our sample which is the actual unit of observation in our analysis and is therefore much larger than the number of spells. We follow the previous literature in including controls for marital status prior to lone motherhood, but note these coefficients must be interpreted cautiously. Such coefficients may represent the impact of differences that result from one's prior marital status, such as the accumulation of state-specific human capital, but may also represent preferences for living in different types of unions. We leave the separation of these particular influences to further research.

The previous section demonstrated the substantial differences between Francophone Quebec and the rest of Canada in the empirical hazard rates to marital and common-law unions. The emergence of this difference in marital behaviour would not appear to lie in changes in relative socio-economic status given that differences between Francophone Quebec and the rest of Canada in levels of education and income have diminished markedly over the past 30 years (Corbeil 2003 and Stelcner and Shapiro 1997). Le Bourdais and Lapierre-Adamcyk (2004) assert that two other factors are crucial. The first was the "Quiet Revolution" in which the citizens of Quebec quickly and strongly rejected traditional Catholic teaching in many areas, especially those dealing with contraception and family life. The second is a feminist movement and a

commitment to gender equality that are stronger in Quebec than in the rest of Canada, with the authors arguing that, on average, there is greater equality among cohabiting couples than among married couples.

The LAD sample is sufficiently large that we can test for differences between language groups separately from residence in Quebec. We do this by including dummy variables to identify two language minorities - Anglophones in Quebec and Francophones outside of Quebec.

Our model also includes two policy-related variables. The first is a measure of the benefits available from social assistance and other government cash transfer programs such as the National Child Benefit. The National Council of Welfare has published these amounts annually for each province for single parent families with one child and for two parent families with two children since 1992 (National Council of Welfare 1992 through 2000). We use these published measures as an index of the benefits available to each type of family. Note that the value of this variable reflects legislative parameters, i.e., the amount due a family with no other income rather than the actual payment made to any individual family, and is, therefore, exogenous to any given individual.

An increase in welfare benefits for a single parent should, other things equal, decrease the likelihood of an exit to marriage (an "independence" effect), whereas greater benefits for a two parent family should, other things equal, increase this likelihood. The provinces generally treat common-law unions in the same manner as registered marriages for purposes of welfare benefits and, hence, the effect of welfare benefits should be of the same sign for each type of exit.

Our second policy related variable is the unemployment rate for each of the 70 economic regions in the country, the expected impact of which is not clear *a priori*. A tighter labor market implies better opportunities for economic self-sufficiency for a lone mother, but also a higher

level of expected income that a new partner would bring to a marriage or common-law union.

We also include a series of dummy variables for calendar year. Most provinces initiated welfare policy reforms during the 1990s that comprised reductions in the level of benefits and a variety of other policy changes designed to induce a shift from reliance on welfare to earned income. Such changes included more stringent monitoring, "snitch" lines, and a variety of opportunities/requirements for training, community service or paid work. In addition, one of goals of the National Child Benefit Supplement (NCBS), introduced in 1998, was to increase the returns to paid employment for low income families with children. Neither the NCBS nor most of the provincial reforms had the explicit goal of influencing marital behaviour. However, these changes all made welfare less attractive relative to paid work and, historically, an exit from lone motherhood to a marital or common-law union has often been accompanied by an exit from welfare. Hence, we include calendar year dummies to capture secular trends in spell duration during this period of important changes in welfare policy. Alberta and Ontario have been among the most aggressive jurisdictions in welfare reform and, hence, we estimate some specifications with interactions between calendar year and dummies for these two provinces. [2]

Exits to Marriage With Children

Table 2 contains the competing risk model estimates for the likelihood of an exit to marriage for Canada as a whole. The baseline case is for a lone mother who was previously married with children and is currently age 25-29 with one child under age 4. She is in her first full year of lone motherhood, this is in 1993, and she lives in a city of 500,000 or more inhabitants in Ontario and is not a Francophone. The final column in the first row shows the predicted probability of an exit

assuming that the lone mother has the foregoing characteristics, that the unemployment rate is 7%, and that welfare benefits are $14,000 for a lone parent with one child and $18,000 for a couple with two children. These welfare benefit values were the actual figures for Ontario in 2000 and the midpoint of the range of values across the ten provinces (National Council of Welfare 2002). The predicted "baseline" probability is 0.13 which is higher than the empirical hazard rate of 0.07 for an exit to married in the first spell year in Table 1. This difference reflects baseline characteristics, especially the assumption that prior marital status is married with children.

The remaining values in the final column represent the predicted probability of an exit assuming that the lone mother has the same characteristics as the omitted category save for the variable in that row. In the case of the continuous variables, the difference is an increase of one percentage point in the unemployment rate and of $1,000 for each of the two welfare benefit variables. In the case of the dummy variables, the difference is a change from a value of 0 to 1 with one exception; for the Quebec Anglophone variable, we also assign a value of 1 to the dummy for the province of Quebec as is appropriate.

The province that stands out most clearly from the others is Quebec, which has a predicted exit probability of 0.05, or 8 percentage points lower than Ontario and 5 percentage points lower than the provinces with the second lowest exit probabilities (Nova Scotia and Manitoba). The minority language dummies indicate that both Anglophones in Quebec and Francophones in Ontario have exit probabilities of 0.09. These values are half-way between the exit probabilities for Francophones in Quebec and Anglophones in Ontario and may reflect the mixed cultural situation of these language minorities.

Both LeBourdais et al. and Lefebvre and Merrigan report that previously single lone

mothers have higher exit rates than lone mothers who were previously in a marital or common-law union but neither set of authors could estimate a competing risk model. In Table 2, those lone mothers who were previously married with children have exit rates to being married with children that are five to six percentage points higher than for the previously common-law with children, unattached or filing children. As a sensitivity check, we also estimated the models without the dummy variables for marital status prior to lone motherhood. The resulting coefficients and standard errors for the other variables (not shown) were very similar to those in Tables 2 and 3.

The coefficient estimates for the policy variables are all very small in magnitude and not statistically different from zero. The welfare benefit variables have the expected signs: an increase in the benefits available to lone parents decreases the exit probability, and an increase in the benefits for couples increases the exit probability. Due to the colinearity of the two welfare benefit variables and the infrequency of welfare benefits among couples, we also estimated a specification with only welfare benefits for a lone parent. The estimated coefficient for lone mother welfare benefits was again small in value and had a large p-value.

The age of the mother has a significant effect, but it is non-monotonic. Lone mothers under 25 (especially under 20) and over 30 (especially over 40) have substantially lower exit probabilities than do lone mothers age 25-29. The coefficients for the number of children variable are small and imprecisely estimated which may reflect the fact that more children both increase the need for a second income but may make the single parent a less attractive partner. Lone mothers with a youngest child age 13 to 17 (i.e., relatively close to adulthood) have an exit probability that is 3 percentage points higher than that of mothers with younger children.

The size of area of residence coefficients imply that exit probabilities are a bit higher in

towns under 15,000 and four percentage points higher in rural areas than in large cities. Our principal reason for including these dummies is to control for effects that may be correlated with other variables of interest. For example, most Anglophones in Quebec live in Montreal and a large proportion of Francophones outside of Quebec live in smaller communities.

The predicted probability of an exit declines steadily from 0.13 in year 1 of the lone mother spell to about 0.05 beyond year 10. This rate of decline is very similar to that for the empirical hazard rates in Table 1. The dummies for calendar year imply a modest decline of two percentage points during the 1990's and, hence, provide no evidence that welfare reforms (in addition to the benefit levels captured directly) have increased the likelihood of an exit to marriage. Furthermore, when we estimated a model with interactions between calendar year and dummy variables for Ontario and Alberta, the interaction coefficients (not shown) were small in size and not significantly different from zero.

We also estimated separate models for NOTFQ and FQ, and in each case the results are generally very similar to those for the entire sample. The main difference, as expected, is that the baseline probability of an exit to marriage is much smaller in FQ than in NOTFQ. For FQ, this probability is 0.05 in the first year of a spell and declines to a value of 0.01 by year 10. For NOTFQ, the predicted probability drops from 0.13 to 0.05 over the same period. Within Quebec (or any other single province), the only source of variation in this variable is changes over time for a given type of family. Hence, we cannot disentangle the effects of welfare benefits and calendar year using the sample for FQ. The calendar year dummies for both NOTFQ and FQ, however, are similar to those for Canada as a whole**.** Finally, we also estimated separate models by prior marital status and by both language and prior marital status. In each case, none of the above conclusions were altered substantially.

Exits to Common-law With Children

Table 3 contains the estimates for the likelihood of an exit to a common-law union. The coefficients for most variables in Table 3 differ substantially from those in Table 2, which highlights the importance of estimating a competing risk model. In Table 3, Quebec has the highest exit likelihood of any province, as opposed to the lowest likelihood as in Table 2. Quebec has a predicted exit probability of 0.12, which is 5 percentage points higher than Ontario (the omitted category in the first row) and 4 percentage points higher than the provinces with the second highest exit probabilities (Newfoundland and Alberta). Anglophones in Quebec have the same exit probability as Anglophones in Ontario due to the offsetting effects of the Quebec and English in Quebec coefficients. The coefficient for Francophones outside of Quebec is statistically significant but small in magnitude.

The coefficients for prior marital status are also quite different from those in Table 2. Lone mothers who were previously common-law with children have an exit rate to common-law that is two to three percentage points higher than the rate for the other groups. Hence, the results from Tables 2 and 3 indicate that the type of lone mother most likely to exit to either a marital or common-law union is in each case a lone mother who previously occupied that same type of union.

As in Table 2, the coefficient estimates for the welfare benefits variables are of the expected signs but small in magnitude and not statistically different from zero. This inference is again unchanged if only welfare benefits available to a lone mother are included. The coefficient for the unemployment rate is statistically significant and implies that spell length is counter-

cyclical (i.e., the exit rate rises when the unemployment rate falls), but the size of the effect is small.

The likelihood of an exit to a commonly law union declines monotonically with the age of the mother, unlike the inverted U-shape for exits to marriage. A larger number of children was associated with a higher exit rate to marriage in Table 2 although the effect is small and imprecisely estimated. In contrast, an exit to a common-law union in Table 3 is somewhat less likely for women with more children and the effect, though small, is precisely estimated. The age of the youngest child is positively associated with both types of exits but the coefficients are larger and more precisely estimated in Table 3 than in Table 2. In Table 2, only the smallest towns and especially rural areas have a statistically different (higher) likelihood of exit to marriage than the baseline case (500,000+). In Table 3, however, all city size categories have a higher likelihood of an exit to a common-law union compared to the baseline category.

The predicted probability of an exit to common-law has a fairly steady value (7%-8%) in the first eights years of the spell and declines only a few percentage points thereafter, as was true of the empirical hazard in Table 1. This contrasts sharply with the monotonically declining pattern of exits to marriage in Table 2.

Most of the calendar year dummies are statistically significant and, unlike the declining pattern in Table 2, at first increase (algebraically) in size and then become moderately more negative again. As with exits to marriage, however, the most important inference is that the estimates provide no indication that the welfare reforms of the 1990's (nor the other factors captured by the year variables) have increased the likelihood of an exit to a common-law union in Canada in general. However, when we estimated a model specification with interactions between calendar year and dummy variables for Ontario and Alberta, the interaction coefficients indicate

an increase of 1-2 percentage points in the exit rate to common-law unions in these two provinces relative to other ones.

Separate estimates by language group provided few additional insights. The main difference between FQ and NOTFQ is the expected one that the exit rate for FQ is six percentage points higher (0.13 versus 0.07) than for NOTFQ in the first spell year. However, this difference disappears by spell year 10 due to a decline in the probability for FQ. Beyond spell year 10, the exit rate declines to a value of 0.03 in NOTFQ but there is no clear decrease in FQ. It should be kept in mind, however, that few spells last this long. The separate models also imply, as did the empirical hazard rates in Figures 3 and 4, that FQ and NOTFQ do not differ in terms of the total likelihood of an exit to a union of some sort, but rather just in the type of union. The calendar year dummies indicate a very modest decline in exit rates in NOTFQ but not in FQ. As with exits to marriage, we estimated separate models by prior marital status and by both language and prior marital status, but arrived at no conclusions substantially different from those above.

Multivariate Estimates with Income Variables

Education level is not in the LAD. The LAD, however, does contain detailed data on income (and its specific sources), a variable that is highly correlated with education, and we estimate some models that include the level of different types of income. We find that our parameter estimates are little changed by the inclusion or exclusion of the individual income variables and interpret this finding as indicating that the absence of education variables from our model has not significantly biased the other coefficient estimates. Individual income (earned, private non-earned and government transfers) is interesting but at least partially endogenous. Hence, we only

discuss the estimated income coefficients themselves only briefly and will provide estimates of the models that include the income variables upon request.

Higher levels of employment income and private, non-employment income are associated with substantially lower exit probabilities to marriage. For example, the predicted probability of an exit to marriage decreases by five percentage points as employment income increases from under $20,000 to over $40,000 or as private, non-employment income increases from under $1,000 to over $10,000. Hence, the "financial independence effect" of such income appears to outweigh the "attractiveness in the marriage market" effect. Welfare benefits would generally be reduced by the full amount of any new partner's income and, as expected, the presence of welfare income is associated with a decrease of 5 percentage points in the probability of an exit to marriage. The results for exits to a common-law union were similar qualitatively but the coefficients were only one-half as large as for exits to marriage. The income coefficients for Francophone Quebec were 25%-50% larger (in absolute value) than those in the rest of Canada for exits to marriage, and 25%-50% smaller for exits to common-law unions.

Differences in the Economic Consequences of an Exit

In this final section, we briefly consider the economic consequences of an exit from lone motherhood for two reasons. First, the literature indicates that an exit to a union is usually accompanied by an increase in income and a reduction in welfare use but there is no information, to our knowledge, as to whether or not the type of union makes a difference. Second, our results indicate that Francophones from Quebec, compared to other Canadians, are much less likely to exit to marriage and more likely to exit to a common-law union. Are the economic consequences

of an exit different for these language groups?

Table 4 provides three measures of economic status in both the last full year before the exit (T-1) and the first full year after the exit (T+1) for those lone mothers observed to exit to either a marital or common-law union. The measures of economic status are being in low income (defined as income below the Statistics Canada Low Income Cutoff), having any welfare income, and having any earned income.

The top panel shows both the level of, and changes in, these proportions for the sample as a whole. Virtually all of the changes between T-1 and T+1 in the proportion of mothers with earned income in Table 4 are small and will receive no further comment. The decline in the proportion of women with low income is large and is slightly larger (29 percentage points versus 26) for exits to common-law unions than for exits to marriage. The decline in the proportion with welfare income is substantially larger (31 percentage points versus 21) for exits to marriage than for exits to common-law unions.

The lower two panels show these changes for FQ and NOTFQ. Considering both types of exits, the data indicate that the decline in the proportion of women with low income is larger (33 percentage points versus 27) in FQ and the decline in the proportion with welfare income is larger (25 percentage points versus 19) in NOTFQ. This result would be predicted by the finding in the previous paragraph combined with the fact that exits to common-law unions are more common in FQ. In addition, however, the lower two panels of Table 4 also show that the decline in the proportion with low income is larger in FQ for both types of exits and the decline in the proportion with welfare income is larger in NOTFQ for both types of exits.

So does the type of union or language matter for the economic consequences of an exit? Table 4 indicates that the answer is no in the case of earned income. For the other measures, the

answer is “yes to some extent”, but the consequences depend on the economic variable considered. Exits to common-law union and both types of exits in FQ are associated with have larger declines in the proportion with low income. Exits to marriage and both types of exits in NOTFQ are associated with have larger declines in the proportion with welfare income. Hence, if one considers reductions in the incidence of low income and in the incidence of welfare income to be positive outcomes, then our data indicate no clear ranking by either exit state or language group.

SUMMARY AND CONCLUSION

The duration of spells of lone motherhood has important consequences for the economic well being of the members of such families and the cost of social programs, especially welfare, but has received little recent attention from Canadian researchers. This paper provides the first estimates of which we are aware of the duration of lone motherhood spells in Canada using a competing risk model, and data that are longitudinal and cover the welfare policy reforms of the last decade. We use a large sample of linked income tax records that covers the period 1982 through 2000.

Our findings highlight the importance of a competing risk model. The likelihood of an exit to marriage starts at a higher level but declines more rapidly with spell duration than does the likelihood of an exit to a common-law union. Furthermore, most other control variables, such as length of spell and age of mother, have different impacts on exits to the two different states. We find no evidence, however, of a link between the exit rate to either a marital or common-law union, and the level of welfare benefits for either lone mothers or two-parent families. In addition, the data do not indicate any secular increase (and usually point to a decrease) in exit

rates to one form of union or another (after controlling for welfare benefit levels and other explanatory variables) during the period of recent welfare reforms, other than a modest increase in exit rates to common-law unions in two provinces, Ontario and Alberta, where such welfare reforms were pursued most aggressively.

Francophones in Quebec have much lower exit rates to marriage and much higher exit rates to common-law unions than do other Canadians even when one conditions on marital status prior to lone motherhood and other socio-economic characteristics. We find, however, no substantial difference between these language groups in the likelihood of an exit from lone motherhood to some form of union.

Finally, we briefly consider the economics consequences of exits from lone motherhood. Such exits lead to only small increases in the proportion of lone mothers with earned income for both exit states and language groups. Exits to common-law unions generally, and in Francophone Quebec specifically, are associated with somewhat larger declines in the proportion of families with low income than are exits to marriage and in the rest of Canada. In contrast, exits to marital unions generally and in the rest of Canada specifically are associated with somewhat larger declines in the proportion of families with welfare income than are exits to common-law unions and in Francophone Quebec.

In summary, we find little evidence that the level of welfare benefits or the recent period of welfare reforms have had an impact on the duration of lone motherhood spells. We also find little evidence to indicate that the shift from marital to common law unions in Francophone Quebec has had a marked impact on the likelihood of exiting lone motherhood or on the overall economic repercussions of such an exit.

Data Appendix: Identifying Lone Mothers and Other Family Types

The declared marital status on tax forms refers to the end of the tax year and, prior to 1992, offered five possible categories: married, widowed, divorced, separated, and single. The Income Tax Guide made it clear that "married" refers to registered marriages and not common-law unions. Starting in 1992, however, the category of "common-law" was added, while the other categories remained unchanged. In constructing the LAD, Statistics Canada first finds a partner for all persons with a Declared Marital Status of "married" or, since 1992, "common-law." This is usually a straightforward process, because married individuals (which is how Canadians file tax forms) are required to identify their partners (including their Social Insurance Numbers) on their forms. However, a spouse is imputed if he or she has not filed a tax form or a match cannot otherwise be made. The LAD then uses a record matching process to identify persons in undeclared CL unions, both prior to and subsequent to 1992, as well as "filing children" who are unattached individuals age 18 or more who live with one or both parents and have no dependents.

This combining of individuals into couples and of parents with their filing children is based on algorithms which have been developed at Statistics Canada over many years and which use address matches, individuals' names and ages, and the identification of other individuals resident at the same address (if any). Younger (non-filing) children are then identified through the pertinent tax deductions, by links with other administrative files, and by other means.

The common-law family status can be imprecise not just in administrative data, such as the LAD, but also in survey data and not infrequently in life itself. For example, Manning and Smock (2003) conducted 90 in-depth interviews with young American men and women with recent cohabitation experience. They conclude that cohabitation is a gradual transition across a

line that is often quite fuzzy and that, even for the individuals involved, it is not a simple task to differentiate between living alone and living with a cohabiting partner. Their research raises questions about the accuracy of survey questions commonly used to identify cohabiting couples. For example, the term "unmarried partner" is used in the U.S. Census, Current Population Surveys, and Survey of Income and Program Participation to identify cohabiting couple families. Manning and Smock's data suggest that this term is not well understood by many young adults who have, in fact, lived with an unmarried partner and do not even think that this term is referring to their living arrangement.

Previous research with the LAD and a desire to limit the impact of classification errors on our results led us to impose the following rules for the identification of transitions into a deemed valid spell of lone motherhood. The basis for these rules is a 5-year data-window centred on the transition year (t) into a spell of lone motherhood. The spell is rejected if any of the following was true during this window:

1. The woman did not file a tax form in any year (t-2 through t+2).
2. The family type of the woman changed more than three times.
3. The woman changed spouses more than two times.
4. The woman separated from and then reunited with the same spouse during the window *and* failed to declare a marital status of "separated" or "divorced" in the interim.
5. The woman was an LP in year t-2 (but not so, of course, in t-1).
6. The woman was not an LP in t+1 but was an LP in t+2.
7. The woman was in a common-law union in either t-1 or t-2 but not both.
8. The woman has children age 18 + but only children age 18+ in year t-1. This applies regardless of her marital status in year t-1.

9. The woman was childless in year t-1 and had a child (of any age) in year t-2.

Rule 1 requires that we have a complete record. Rules 2 through 7 reflect a concern with the accuracy of information or even the stability of the actual situation for individuals with very frequent changes in family status. Rules 8 and 9 reflect both doubts regarding individuals with what appear to be unusual changes in child status and our wish to focus on women with children under 18. Note, however, that a woman might not qualify to enter our sample over one five-year window, but do so over another. The application of these rules reduced the number of potential spells by approximately 50% with most of the reduction resulting from Rules 1, 5, 6 and 7. Subsequent to this reduction, however, the annual number of lone mother families is between 102 and 110 percent of estimates from survey and census data. Furthermore, these differences are smallest during the 1990's and that is one more reason why we limited exits from lone motherhood to 1993 and beyond. Rule 6 implies that a woman who is *not* an LP in year T+1 *and* is an LP in year T+2 is not be deemed to have started a valid new spell of lone motherhood. We do, however, permit the woman to have a new spell of lone motherhood if she eventually meets all of the above conditions.

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[1] Keifer (1990) shows that the likelihood function for the duration model corresponds to that of the standard logit model specification. Our approach is also employed by Gunderson and Melino (1990) for strike durations, by Ham and Rae (1987) for durations of joblessness, and by Finnie and Sweetman for spells of low income.

[2] See the National Welfare to Work Study (publish.uwo.ca/~pomfret/wtw/) for an extensive description of provincial reforms. U.S. research has found little consistent evidence that recent welfare reforms have affected female headship of families (Fitzgerald and Ribar 2004 and Bitler, Gelbach, Hornes and Zavodny 2004).

Figure 1 Exit Rate and Survival Function for Exits from Lone Motherhood

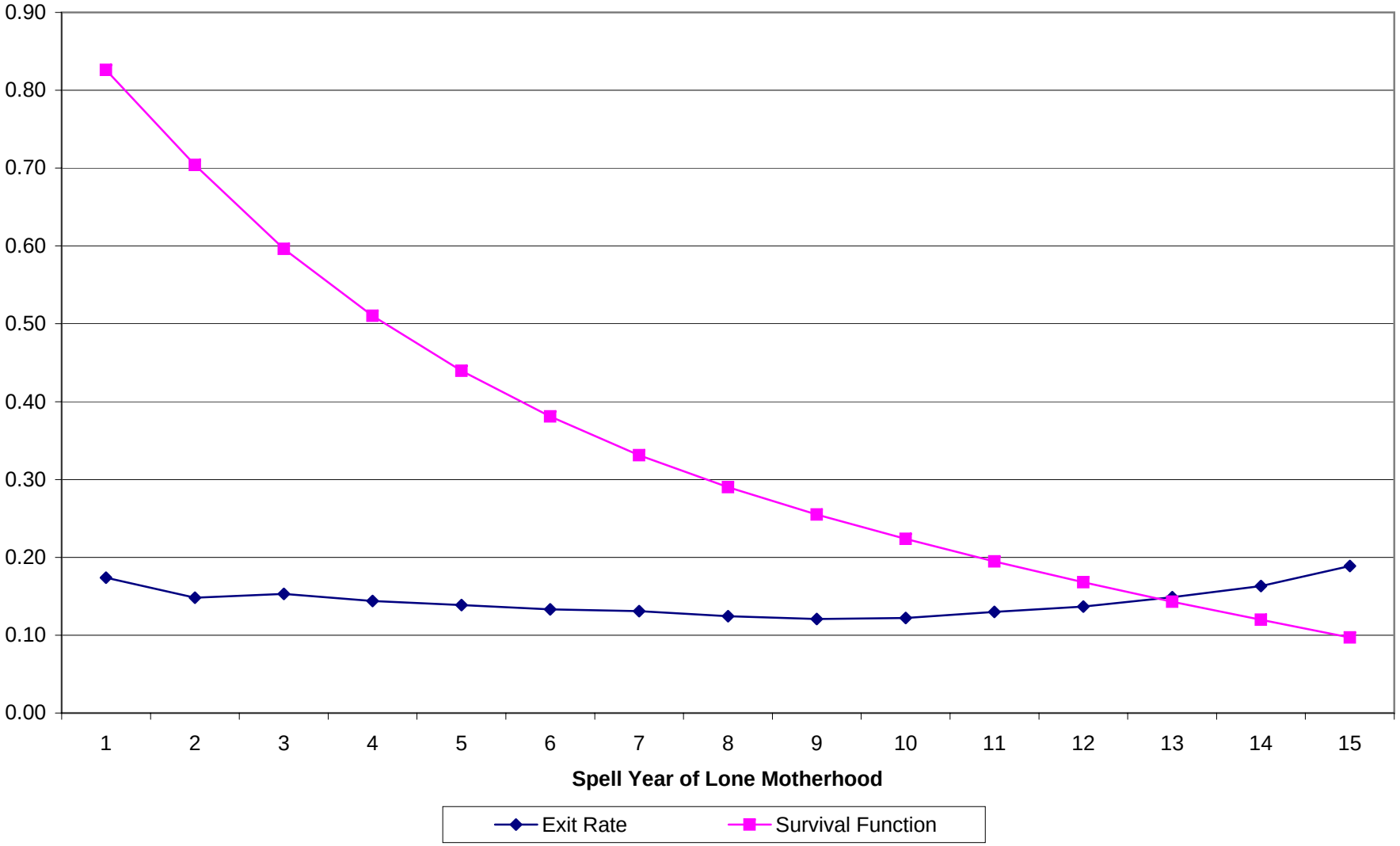

Figure 2 Exit Rates to Different Possible States

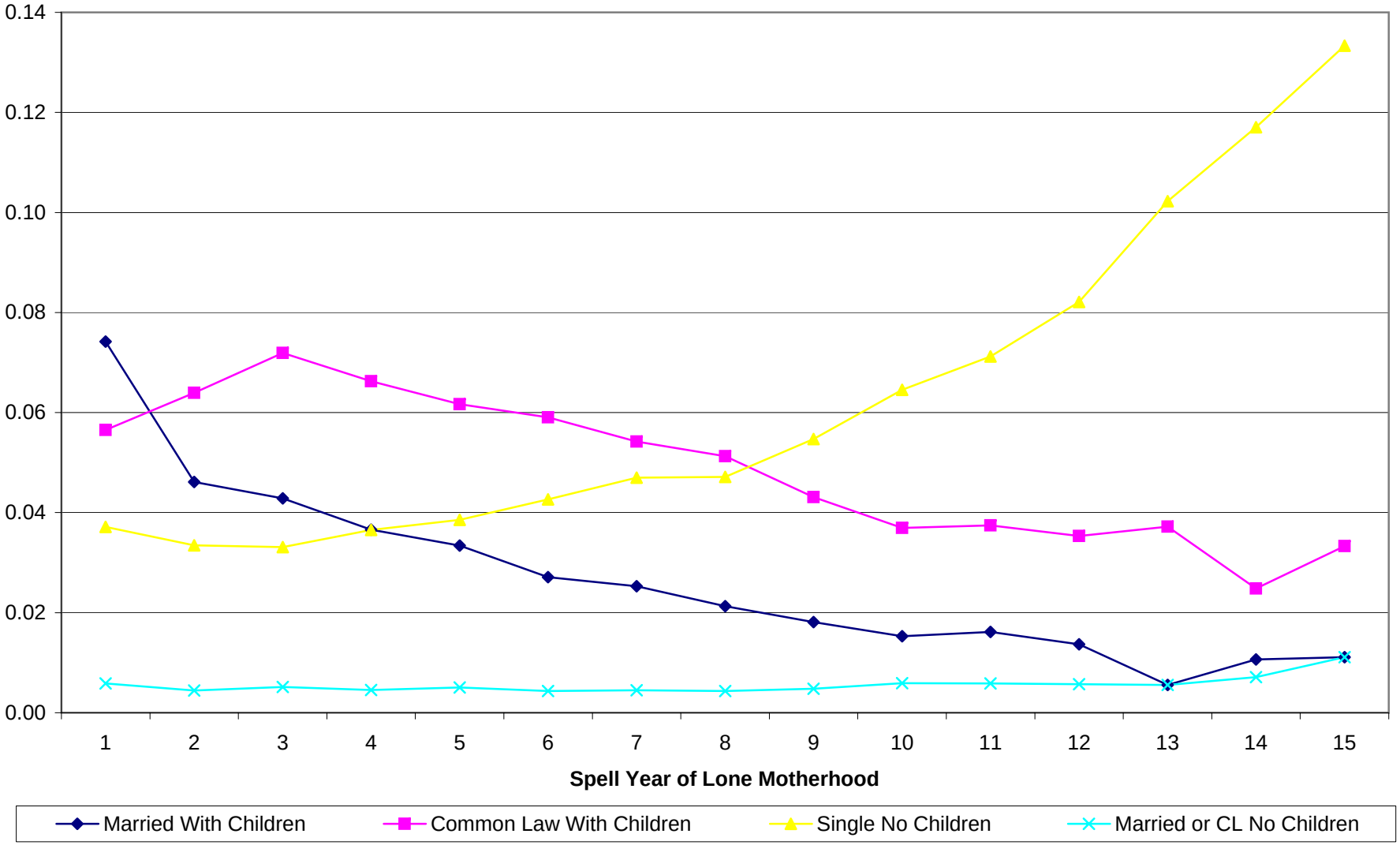

Figure 3
Exit Rate to Married with Children and to Common Law with Children by Language Group

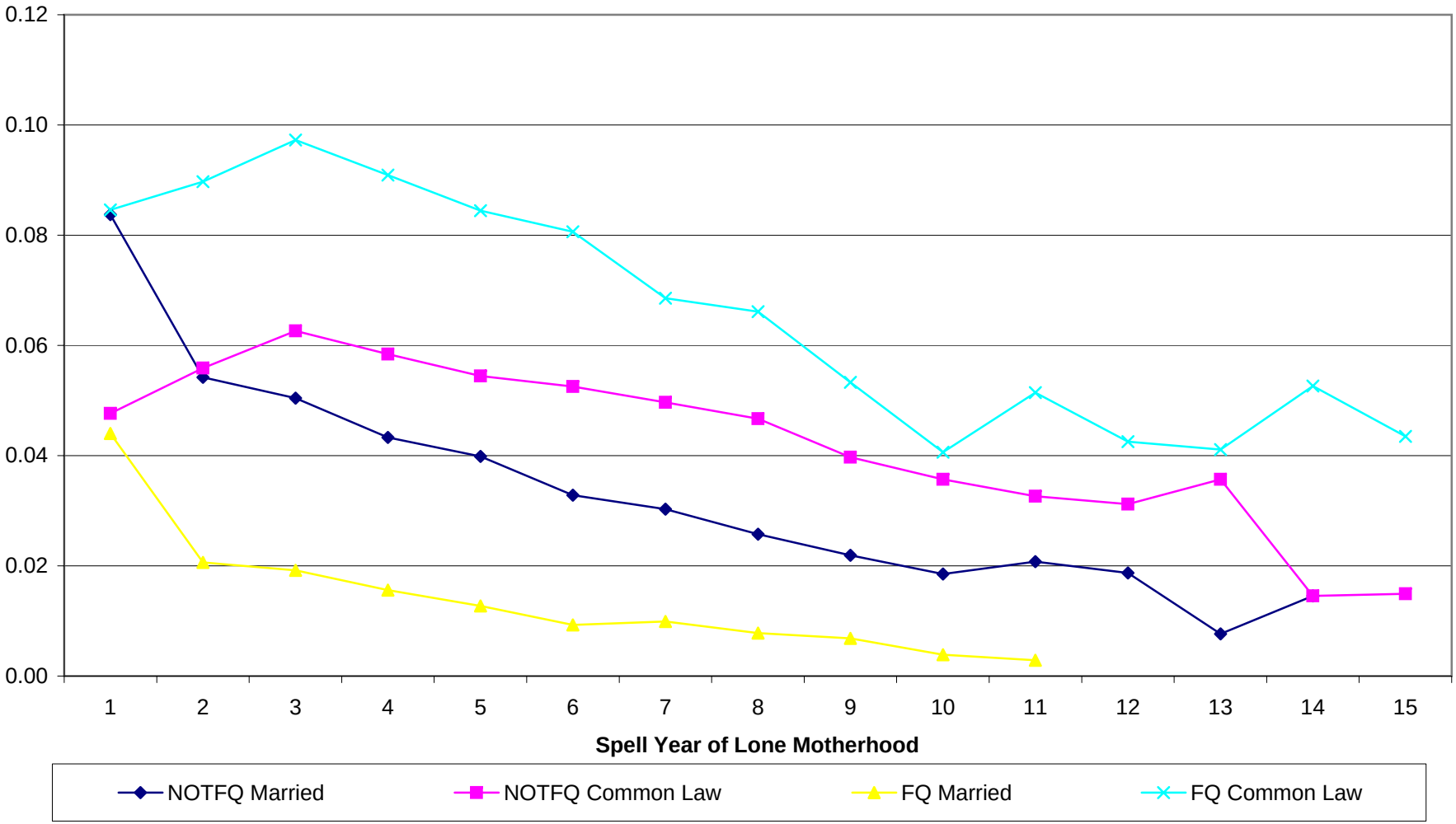

Figure 4
Exit Rate to a Union (Married or Common Law) With Children Under 18 by Language Group

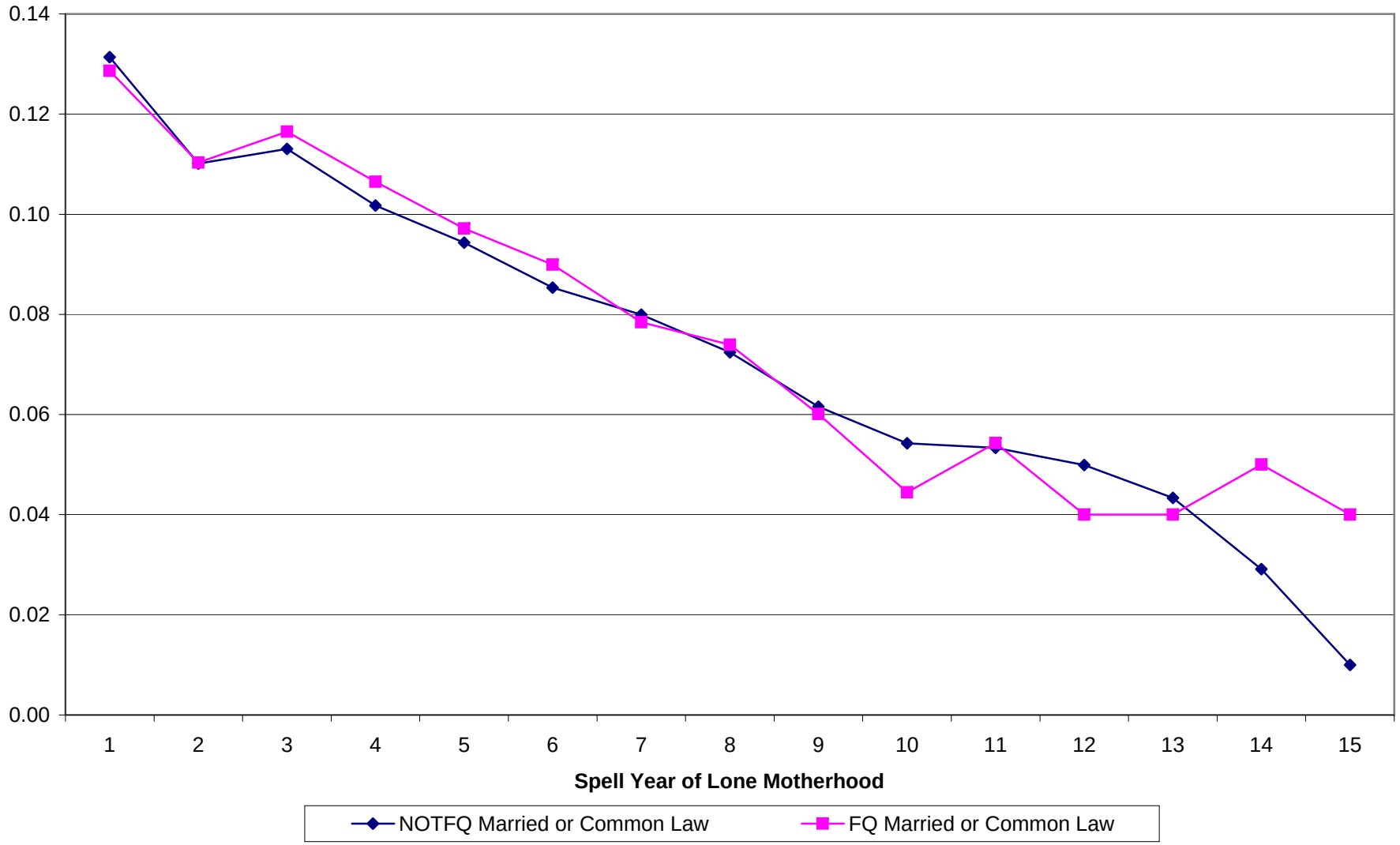

Table 1
Empirical Hazard Functions By Prior Marital Status

	Canada Other Than Francophone Quebec			Francophone Quebec		
	Hazard of Exit to					
Spell Year	Married With Children	Common Law With Children	Married or CL With Children	Married With Children	Common Law With Children	Married or CL With Children
	Previously Married With Children					
1	0.10	0.04	0.14	0.06	0.06	0.12
2	0.06	0.05	0.11	0.02	0.07	0.10
3	0.05	0.05	0.11	0.02	0.08	0.10
4	0.05	0.05	0.10	0.02	0.08	0.09
5	0.04	0.05	0.09	0.01	0.08	0.09
6	0.03	0.05	0.08	0.01	0.07	0.08
7	0.03	0.04	0.07	0.01	0.06	0.07
8	0.03	0.04	0.07	0.01	0.06	0.06
9	0.02	0.04	0.06	0.01	0.05	0.06
10	0.02	0.03	0.05	0.01	0.04	0.04
11	0.02	0.03	0.05	*	0.04	0.04
12	0.02	0.03	0.05	*	0.04	0.04
13	0.01	0.03	0.04	*	0.03	0.03
14	0.02	0.02	0.04	*	0.04	0.04
15	*	*	*	*	*	*
	Previously Common Law With Children					
1	0.03	0.06	0.09	0.01	0.09	0.10
2	0.03	0.06	0.09	0.01	0.10	0.11
3	0.04	0.10	0.14	0.02	0.14	0.15
4	0.03	0.08	0.12	0.01	0.10	0.12
5	0.03	0.08	0.11	0.01	0.10	0.11
6	0.02	0.07	0.09	0.01	0.10	0.11
7	0.02	0.06	0.09	0.01	0.11	0.12
8	0.01	0.06	0.07	*	0.08	0.08
9	0.01	0.04	0.05	*	0.04	0.04
10	*	0.05	0.05	*	0.03	0.03
11	*	*	*	*	0.05	0.05
12	*	*	*	*	0.04	0.04
13	*	*	*	*	*	*
14	*	*	*	*	*	*
15	*	*	*	*	*	*
	Previously Unattached or Filing Child					
1	0.07	0.08	0.15	0.04	0.16	0.20
2	0.05	0.07	0.12	0.03	0.14	0.17
3	0.04	0.07	0.11	0.02	0.12	0.14
4	0.04	0.06	0.10	0.02	0.12	0.13
5	0.04	0.06	0.11	0.01	0.10	0.11
6	0.03	0.06	0.09	0.01	0.09	0.11
7	0.03	0.06	0.09	0.01	0.10	0.11
8	0.02	0.05	0.08	0.01	0.08	0.09
9	0.02	0.05	0.07	*	0.06	0.06
10	0.02	0.04	0.06	*	0.06	0.06
11	0.02	0.04	0.03	*	0.07	0.03
12	0.01	0.04	0.04	*	0.04	0.04
13	*	0.05	0.05	*	0.06	0.06
14	*	*	*	*	0.05	0.05
15	*	*	*	*	*	*

Sample Size: 450,910 spell years in 89,044 spells
* Less than 5 exits

Table 2
Competing Risks of Exit to Status of Married with Children Under 18

	Coefficient	Standard Error	P-value	Probability of Exit
Intercept	-1.78	0.15	0.00	0.13
Province:				
Newfoundland	0.09	0.09	0.30	0.14
PEI	0.07	0.11	0.52	0.14
Nova Scotia	-0.20	0.05	0.00	0.11
New Brunswick	-0.02	0.07	0.74	0.13
Quebec	-1.11	0.05	0.00	0.05
Manitoba	-0.30	0.09	0.00	0.1
Saskatchewan	-0.12	0.06	0.05	0.12
Alberta	-0.12	0.08	0.11	0.12
British Columbia	-0.16	0.03	0.00	0.11
Minority Language Group:				
English in Quebec	0.72	0.06	0.00	0.09
French Outside Quebec	-0.43	0.09	0.00	0.09
Pre-Lone Mother Marital Status:				
Single, childless	-0.59	0.03	0.00	0.08
Married or Common Law, childless	0.12	0.05	0.02	0.15
Filing Child	-0.49	0.04	0.00	0.08
Common Law with child	-0.75	0.03	0.00	0.07
Policy Variables:				
Unemployment Rate	0.00	0.00	0.29	0.13
Welfare benefit: Single parent	-0.03	0.03	0.31	0.13
Welfare benefit: Couple	0.01	0.02	0.47	0.13
Age of Mother:				
Under 20	-0.42	0.14	0.00	0.09
20 through 24	-0.13	0.03	0.00	0.12
30 through 34	-0.25	0.02	0.00	0.1
35 through 39	-0.50	0.03	0.00	0.08
40 through 44	-0.79	0.03	0.00	0.06
45 through 54	-1.00	0.04	0.00	0.05
Number of Children:				
Two	0.03	0.02	0.11	0.13
Three	0.05	0.03	0.05	0.14
Four	0.08	0.04	0.08	0.14
Five or more	0.11	0.07	0.09	0.14
Age of Youngest Child:				
4 through 7	0.00	0.02	0.88	0.13
8 through 13	0.02	0.03	0.53	0.13
14 through 18	0.23	0.04	0.00	0.16

Table 2 (continued)

Population Size of Area				
100,000-499,999	-0.01	0.02	0.82	0.13
30,000-99,999	-0.03	0.03	0.28	0.13
15,000-29,999	-0.01	0.05	0.87	0.13
<15,000	0.08	0.03	0.00	0.14
Rural	0.29	0.03	0.00	0.17
Year of Lone Mother Spell:				
2	-0.24	0.02	0.00	0.11
3	-0.24	0.02	0.00	0.11
4	-0.39	0.03	0.00	0.09
5	-0.48	0.03	0.00	0.09
6	-0.64	0.04	0.00	0.07
7	-0.70	0.05	0.00	0.07
8	-0.81	0.05	0.00	0.06
9	-0.97	0.07	0.00	0.05
10	-1.10	0.09	0.00	0.05
11	-1.00	0.10	0.00	0.05
12	-1.09	0.14	0.00	0.05
13	-1.72	0.24	0.00	0.03
14	-1.07	0.25	0.00	0.05
15	-1.21	0.46	0.01	0.04
Calendar Year:				
1994	-0.04	0.03	0.23	0.13
1995	-0.07	0.03	0.02	0.12
1996	-0.08	0.03	0.01	0.12
1997	-0.19	0.04	0.00	0.11
1998	-0.24	0.04	0.00	0.11
1999	-0.19	0.04	0.00	0.11

Number of spell-years with an exit	17095
Number of spell-years without an exit	386085
Total number of spell-years	403180

Table 3
Competing Risks of Exit to Status of Common Law Union with Children Under 18

	Coefficient	Standard Error	P-value	Probability of Exit
Intercept	-2.65	0.13	0.00	0.07
Province:				
Newfoundland	0.15	0.07	0.04	0.08
PEI	-0.32	0.11	0.00	0.05
Nova Scotia	-0.23	0.05	0.00	0.05
New Brunswick	-0.02	0.06	0.72	0.06
Quebec	0.61	0.04	0.00	0.12
Manitoba	0.10	0.08	0.19	0.07
Saskatchewan	-0.07	0.05	0.18	0.06
Alberta	0.18	0.07	0.00	0.08
British Columbia	0.00	0.03	0.88	0.07
Minority Language Group:				
English in Quebec	-0.52	0.05	0.00	0.07
French Outside Quebec	0.13	0.07	0.05	0.07
Pre-Lone Mother Marital Status:				
Single, childless	-0.02	0.02	0.50	0.07
Married or Common Law, childless	-0.06	0.05	0.24	0.06
Filing Child	-0.18	0.03	0.00	0.06
Common Law with child	0.24	0.02	0.00	0.08
Policy Variables:				
Unemployment Rate	-0.01	0.00	0.00	0.07
Welfare benefit: Single parent	-0.01	0.02	0.73	0.07
Welfare benefit: Couple	0.01	0.02	0.44	0.07
Age of Mother:				
Under 20	0.24	0.09	0.01	0.08
20 through 24	0.11	0.02	0.00	0.07
30 through 34	-0.24	0.02	0.00	0.05
35 through 39	-0.57	0.02	0.00	0.04
40 through 44	-0.99	0.03	0.00	0.03
45 through 54	-1.48	0.04	0.00	0.02
Number of Children:				
Two	-0.04	0.02	0.01	0.06
Three	-0.15	0.02	0.00	0.06
Four	-0.21	0.04	0.00	0.05
Five or more	-0.24	0.06	0.00	0.05
Age of Youngest Child:				
4 through 7	0.06	0.02	0.00	0.07
8 through 13	0.15	0.02	0.00	0.08
14 through 18	0.48	0.03	0.00	0.1

Table 3 (continued)

Population Size of Area	0.00	0.00	0.00	
100,000-499,999	0.20	0.02	0.00	0.08
30,000-99,999	0.25	0.02	0.00	0.08
15,000-29,999	0.28	0.04	0.00	0.09
<15,000	0.28	0.02	0.00	0.09
Rural	0.36	0.02	0.00	0.09
Year of Lone Mother Spell:				
2	0.12	0.02	0.00	0.07
3	0.24	0.02	0.00	0.08
4	0.20	0.02	0.00	0.08
5	0.13	0.03	0.00	0.07
6	0.13	0.03	0.00	0.07
7	0.04	0.03	0.27	0.07
8	0.00	0.04	0.94	0.07
9	-0.09	0.05	0.04	0.06
10	-0.19	0.06	0.00	0.05
11	-0.17	0.07	0.01	0.06
12	-0.23	0.09	0.01	0.05
13	-0.14	0.11	0.21	0.06
14	-0.47	0.18	0.01	0.04
15	-0.32	0.29	0.27	0.05
Calendar Year:				
1994	-0.19	0.03	0.00	0.06
1995	-0.12	0.03	0.00	0.06
1996	0.01	0.03	0.66	0.07
1997	-0.07	0.03	0.01	0.06
1998	-0.09	0.03	0.00	0.06
1999	-0.08	0.03	0.01	0.06

Number of spell-years with an exit	27730
Number of spell-years without an exit	386085
Total number of spell-years	413815

Table 4
Proportions of Mothers in Families with Low Income and with Welfare Income and Proportion of Lone Mothers with Earned Income in Year Prior to (T-1) and Year Following (T+1) an Exit to a Marital or Common Law Union

Canada

	Exits to Marriage or Common Law			Exits to Marriage			Exits to Common Law		
	% Low Income	% Welfare Income	% Earned Income	% Low Income	% Welfare Income	% Earned Income	% Low Income	% Welfare Income	% Earned Income
T-1	0.45	0.38	0.68	0.45	0.37	0.66	0.45	0.38	0.68
T+1	0.16	0.13	0.71	0.19	0.06	0.69	0.16	0.17	0.72
Change	-0.29	-0.25	0.03	-0.26	-0.31	0.03	-0.29	-0.21	0.04
Canada Other Than Francophone Quebec									
T-1	0.44	0.39	0.67	0.45	0.37	0.67	0.44	0.42	0.68
T+1	0.17	0.14	0.701	0.19	0.06	0.7	0.15	0.18	0.71
Change	-0.27	-0.25	0.03	-0.26	-0.31	0.03	-0.29	-0.24	0.03
Francophone Quebec									
T-1	0.48	0.32	0.69	0.53	0.35	0.61	0.47	0.32	0.7
T+1	0.15	0.13	0.72	0.21	0.09	0.64	0.14	0.14	0.74
Change	-0.33	-0.19	0.03	-0.32	-0.26	0.03	-0.33	-0.18	0.04

Sample Size: 17,095 exits to marriage and 27,730 exits to a common law union

Table A-1
Summary Statistics for Independent Variables in Duration Models*

N.B. The statistics below refer to spell-years which are much more numerousr than spells.

Pre-Lone Mother Marital Status	Count	%
Single, childless	54,815	12.1
Married with Children	287,270	63.3
Married or Common Law, childless	8,270	1.8
Filing Child	25,515	5.6
Common Law with Children	78,010	17.2
	453,880	
Age of Mother		
Under 20	1,600	0.4
20 through 24	35,285	7.8
25 through 29	70,160	15.5
30 through 34	103,915	23.0
35 through 39	114,280	25.3
40 through 44	83,140	18.4
45 through 54	44,205	9.8
	452,585	
Number of Children		
One	190,865	42.1
Two	177,410	39.1
Three	63,095	13.9
Four	16,195	3.6
Five or more	6,305	1.4
	453,870	
Age of Youngest Child		
0 through 3	125,050	27.6
4 through 7	97,000	21.4
8 through 13	172,530	38.0
14 through 18	59,300	13.1
	453,880	
Size of Area		
500,000+	206,310	45.5
100,000-499,999	83,670	18.5
30,000-99,999	51,515	11.4
15,000-29,999	14,420	3.2
<15,000	50,860	11.2
Rural	46,455	10.2
	453,230	
Province		
Newfoundland	8,675	1.9
PEI	2,625	0.6
Nova Scotia	18,145	4.0
New Brunswick	13,975	3.1
Quebec	116,475	25.7
Ontario	164,615	36.3
Manitoba	18,400	4.1
Saskatchewan	15,025	3.3
Alberta	40,210	8.9
British Columbia	55,670	12.3
	453,815	

Table A-1 (continued)

Minority Language Status		
English in Quebec	11,190	2.5
French Outside Quebec	4,735	1.0
Employment Income of Mother		
< $1,000	153,270	33.9
$1,000-$10,000	81,795	18.1
$10,000-$20,000	65,435	14.5
$20,000-$30,000	58,090	12.9
$30,000-$40,000	44,250	9.8
$40,000-$50,000	24,085	5.3
> $50,000	24,560	5.4
	451,485	
Private Nonemployment Income of Mother		
< $1,000	295,400	65.7
$1,000-$5,000	78,260	17.4
$5,000-$10,000	43,985	9.8
> $10,000	31,830	7.1
	449,475	
Presence of Welfare Income		
Welfare Income	181,485	40.0
No Welfare Income	272,390	60.0
	453,875	

*Totals vary slighly due to minor variation in missing values.
Sample Size: 453,875 spell years across 93,730 spells